Complicated Cases of CRE - Public Health Response

Sara McNamara, MPH, MT(ASCP), CIC

Surveillance for Healthcare-Associated and Resistant Pathogens Unit

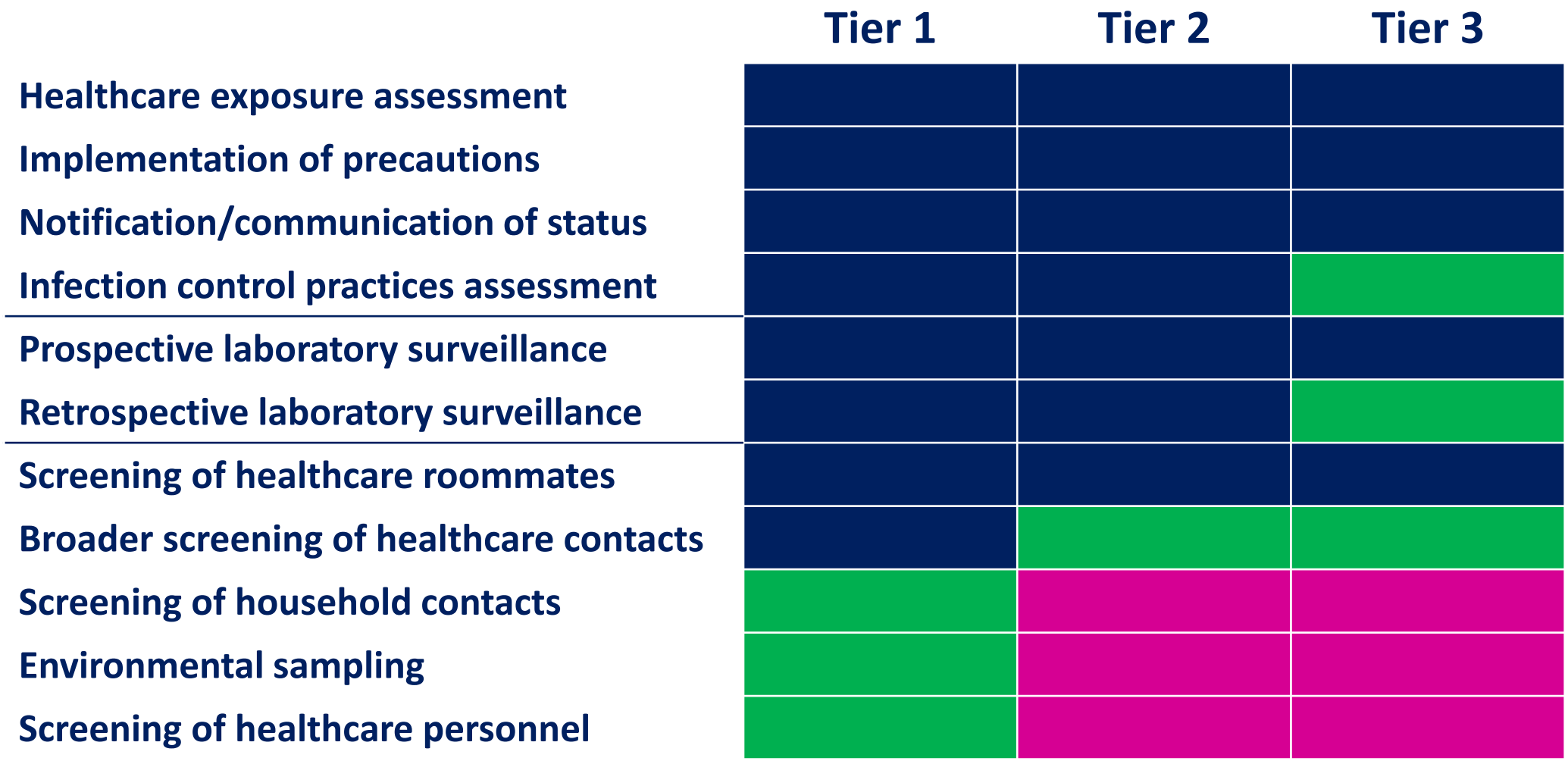
Michigan Department of Health and Human Services

CDC Guidance for Novel MDRO Containment

- Response to a **single case** of resistance
- Goal to slow the spread of novel or unusual MDROs or resistance mechanisms
- 3-tiered approach based on organism or mechanism and local epidemiology
  - Tier 1 – Novel Resistance and Pan-R
  - Tier 2 – MDROs Primarily found in healthcare settings but not found regularly (e.g., non-KPC CP-CRE)
  - Tier 3 – MDROs found regularly, but not endemic (e.g., KPC)

https://www.cdc.gov/hai/outbreaks/mdro/index.html

Containment Response Activities



Case Study

- On 4/16/19, MDHHS SHARP was notified of a suspect CP-CRE case reported into MDSS
  - Urine culture 4/12/19
  - Carbapenem resistant Enterobacteriaceae *Escherichia coli*, >100,000 col/mL Doripenem R, Imipenem R, Meropenem R
- Case notes in MDSS:
  - 74 year-old male with known Parkinson's disease, diabetes, hypertension, seizure history presented from skilled nursing facility for altered mental status
  - Patient's mental status has improved after being in hospital (prior MRIs no acute findings), family states this is his usual course and feels to be secondary to UTI
  - Chronic indwelling urinary catheter, recent urine cultures positive for *P. aeruginosa* and ESBL *E. coli*
  - Other issues include sacral decubitus which was unstageable and apparently started in India where he was recently hospitalized for hypoglycemia and seizures. Had wound debridement on 4/9. Wound stage 3 on exam today, clean with no drainage

Healthcare Investigation - Hospital

- Admitted on 4/12/19 to a single patient room
- Placed on contact precautions on 4/14/19, CRE+ culture
- Discharged to SNF on 4/16/19
- Previous admissions
  - 2/22 - 3/1 - VZV chest wall T1 dermatome, UC with ESBL *E. coli*
  - 3/4 - 3/11 - MS changes, UC with *P. aeruginosa*
  - 4/9 – sacral wound debridement
  - Single patient room (no CP) for each admission
- Requested isolate submission to BOL
  - *E. coli* NDM+

Containment Recommendations for Hospital

Flag patient chart for CP for future admissions	Placed 4/14/19
Mechanism for notification of MDRO status at transfer	Reviewing process
Prospective lab surveillance for possible matching isolates	Reviewing, no matching to date
Lab lookback for potential matching isolates	Reviewed, no matching
Screening of high-risk contacts or point-prevalence survey	Chose not to screen
ICAR assessment of facility infection prevention practices	Chose not to participate

Healthcare Investigation - SNF

- Admitted 4/16/19 to single patient room
- Not aware of CRE status on admission
- Placed on contact precautions on 4/17/19
- Previous admissions:
  - 3/1 – 3/4/19
  - 3/11 – 4/12/19
  - Single patient room (no CP) for each admission

Containment Recommendations for SNF

Place patient in single patient room on Contact Precautions	Placed 4/17/19
Notify patient/family of results and use of prevention measures	Notified 4/17/19
Flag patient chart for CP for future admissions	Placed 4/17/19
Mechanism for notification of MDRO status at transfer	Reviewed process
Prospective lab surveillance for possible matching isolates	Reviewing, no matching to date
Lab lookback for potential matching isolates	Reviewed, no matching

Recommendations for SNF

Screen patient for CP-CRE and *Candida auris*	*Candida auris* – negative *E. coli* NDM+ *K. pneumoniae* OXA-48+
Screening of high-risk contacts or point-prevalence survey	3 high-risk contacts (on antibiotics, overlapped on unit) – all negative
ICAR assessment of facility infection prevention practices	Chose not to participate

Considerations for CP-CRE Screening

- Who to screen
  - Epi-linked patient contacts of newly identified CP-CRE patients
  - Patients with an overnight stay in a healthcare facility outside the U.S. in the prior 6-12 months
  - Patients at high-risk for colonization
- Colonization screen testing
  - Available through MDHHS BOL
  - Rectal swab collection
  - Collection supplies are available for facilities (e.g., SNF)

Considerations for *Candida auris* Screening

- Who to screen
  - Close contacts of *C. auris* patients
  - Patients with an overnight stay in a healthcare facility outside the U.S. in the past 12 months
  - Patients in high-acuity long-term care facilities (e.g., care for ventilated patients), especially those with CP-CRE or other MDROs
- Colonization screen testing
  - Available through ARLN
  - Axilla/groin swab
  - Must be approved by SHARP unit
    - We can assist with obtaining specimen collection kits, contact investigation, and follow-up

Thank You

Surveillance for Healthcare Associated and Resistant Pathogens (SHARP) Unit
Michigan Department of Health and Human Services (MDHHS)
(517) 335-8165